

ARGUMENTS/REMARKS

Applicants would like to thank the examiner for the consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe and claim the subject matter which applicants regard as the invention.

Claims 1-22 remain in this application. The claims have been amended for the sole purpose of clarification and/or correcting errors introduced in previous amendments. Claims 23-30 have been added to include dependencies based on previously submitted multiple dependent claims that have been amended to remove the multiple dependencies.

The Examiner has allowed claims 7-9 and 17-19. These claims have been amended to clarify and correct the claim language. The amendments are not considered substantive.

The Examiner objected to claim 10 for formalities that are corrected by the amendments provided in this response. Hence, this objection is moot.

The Examiner objected to claims 4-6 and 10 as being improper multiple dependencies. However, this rejection is improperly identified. The cited claims are not improper multiple dependencies, because they do not depend on any other multiple dependent claim. Instead, the errors cited by the examiner should have led to an objection for a lack of antecedent basis. These claims have been amended to correct the lack of antecedent basis, and thus the claims are now in proper format. New claims 23-30 are added to continue the dependencies of the original claims 4-6 and 10.

The Examiner objected to claims 6-10, 14, 16, and 21 for the insertion of extraneous characters. Those claims (along with others having similar errors) have been amended, making those objections moot.

Because the Examiner had allowed claim 10 in a prior action and has not provided any grounds for rejecting claim 10, claim 10 remains in a condition for allowance.

The Examiner again objects to the drawings for not showing all of the features

recited in claim 9, lines 22-35 and similarly in claim 19. Applicant again disputes this objection, and notes that the Examiner has failed to identify which features of claim 9, if any, are not identified in a drawing. Applicant notes that all of the cited elements of claim 9 are shown in one of the figures. In particular, FIGS. 5 and 6 show the features of claim 9. Accordingly, applicant is not providing amended drawings and applicant requests that the Examiner either withdraw the objection, or notify applicant of exactly which features of claim 9 are not found in one of the drawings.

Claims 1-6, 11-16, and 20-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hornak (U.S. 5,678,222). For the following reasons, the rejection is respectfully traversed.

Claim 1 recites "quadrature demodulating means" including "a pair of second quadrature mixers" with "phase shifting means" for "shifting a phase of said local oscillation signal based upon said band switching signal to thereby supply the phase-shifted local oscillation signal to one or both of said pair of first quadrature mixers". The reference does not suggest this element of claim 1.

The Examiner cites FIG. 12 of Hornak as teaching the claimed elements. However, it is clear that Hornak shows only a single mixer 123 in the cited figure, and thus does not teach all of the elements of claim 1.

The Examiner admits in the Office action that Hornak fails to teach a second mixer, stating that instead that Hornak "still produced a quadrature reception baseband signal by utilizing a time-shase [sic] mixer" eliminating the need for "precisely-matched mixers and amplifiers" and being thus "advantageous over a pair of quadrature mixers as claimed..." (see page 3 of the Office action of October 24, 2003).

In making this statement, the Examiner thereby admits that a prima facie case of obviousness has not been made. In order to support a prima facie case of obviousness, the Examiner must show a teaching or suggestion of *all* of the claim elements and/or claim limitations (MPEP §2143.03). Because the reference does not suggest a second mixer, as explicitly claimed, the Examiner has not supported a prima facie case of obviousness, and the rejection cannot stand.

The Examiner's opinion that the invention is less advantageous than the prior art is not evidence of obviousness. Moreover, if it is true that the prior art is superior, it would support a finding that the prior art teaches away from the current invention, and thus cannot support a case of obviousness.

Further, even if both inventions produce a "quadrature reception baseband signal" as stated by the Examiner, that is not relevant to a finding of obviousness. Inventions that produce the same result in different ways can be patentably distinct over each other, and the Examiner has admitted that the invention of claim 1 operates differently than the Hornak device.

Even further, the proposed modification cannot render the prior art unsatisfactory for its intended purpose, or change the principle of operation of a reference (MPEP §2143.01). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125. Adding a second mixer to Hornak would clearly change the principle of operation of the Hornak device. Hence, the modification is not proper.

In addition, even if a second mixer were added to the Hornak device, Hornak teaches controlling a phase shift by using a square wave generator 129 to control switch 135. This is done to combine two input signals $f_1(t)$ and $f_2(t)$ for multiplexing those signals in a phase shifted manner (col. 12, lines 6-28). Hornak does not suggest a "band switching signal" as recited in the claim.

Finally, the Examiner has not provided the proper motivation for modifying the reference to add an additional mixer. The Examiner must show that there is some suggestion or motivation to modify the reference (MPEP §2143.01). The mere fact that references can be modified, alone, is not sufficient to establish prima facie obviousness (*Id.*). The prior art must also suggest the *desirability* of the combination (*Id.*). The fact that the claimed invention is within the capabilities of one of ordinary skill in the art is also not sufficient, by itself, to establish prima facie obviousness (*Id.*).

The Examiner has cited no support for any such suggestion or motivation for the

modification from within the reference, and neither does the Examiner provide any references supporting any motivation to modify the reference(s) by adding the mixer.

Consequently, for each and all of the above reasons, the Examiner has failed to support a prima facie case of obviousness, and hence the rejection cannot stand. Accordingly, claim 1 is patentable over the reference.

Claim 2 recites a "quadrature modulating means" with similar limitations of the "quadrature demodulating means" of claim 1. Claim 3 recites both "quadrature modulating means" similarly limited as claim 2 and the "quadrature demodulating means" similarly limited as claim 1, and thus claims 2 and 3 are patentable over the references for the same reasons as claim 1.

Claims 4-6, which depend on claim 3, are thus patentable for the same reasons as claim 3.

Further, claim 4 recites that:

said phase shifting means supplies a signal obtained by shifting the phase of said local oscillation signal by $\pi/2$ to one of said pair of first quadrature mixers and one of said pair of second quadrature mixers, while said phase shifting means supplies one of said local oscillation signal and a signal obtained by inverting a code of said local oscillation signal to the other of said pair of first quadrature mixers and to the other of said pair of second quadrature mixers in response to said band switching signal

This limitation is not taught by the reference, even if it is modified by the addition of an additional mixer as suggested by the Examiner, because there is no suggestion that one mixer have a phase shift and the other have an inverted signal in response to the band switching signal, as recited by the claim. Hence, claim 4 is patentable over the reference for this reason as well.

Claims 5 & 6 also recite that the first and second quadrature mixers are treated in a differently (see claim language for specifics) in a way not suggested by the reference. Hence, those claims are patentable over the reference for that reason, too.

Claim 11 recites a method including a step of:

shifting a phase of said local oscillation signal in response to said band switching signal to thereby supply the phase-shifted local oscillation signal to a first quadrature mixer for converting either the reception signal or the reception intermediate frequency signal into a reception baseband signal

As discussed in the discussion for claim 1, the reference does not suggest the band switching signal of the invention. Thus, claim 11 is patentable over the reference for that reason. Claims 12 & 13 contain a similar step, and thus are patentable over the reference for that reason as well. Claims 14-16 depend on claim 13, and thus are patentable for the same reason as claim 13. Further, each of claims 14-16 specify that a signal to a first quadrature mixer has a different treatment (e.g., a different phase shift, no phase shift, or an inversion) than a signal to a second quadrature mixer. The reference does not suggest these differences either, and thus claims 14-16 are patentable over the references for this reason as well.

Claim 20 is patentable because it depends on patentable multiple parent claims.

Claims 21 and 22, and new claims 23-30, have similar limitations as those discussed above, and thus are also patentable over the references for those reasons.

In consideration of the foregoing analysis, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. 32430.

Respectfully submitted,

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